

REMARKS

Claims 1–13 are pending in this application. By this Amendment, claims 1 and 8 are amended. Non-elected claims 10–12 have been withdrawn from consideration. Support for the amendments to the claims may be found in the specification, for example, in paragraph [0019]. No new matter is added.

In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

I. Rejections Under 35 U.S.C. §103

The Office Action rejects claims 1–9 and 13 under 35 U.S.C. §103(a) over U.S. Patent Application Publication No. 2002/0136929 to Oikawa et al. ("Oikawa") in view of U.S. Patent No. 5,041,922 to Wood et al. ("Wood"). Applicants respectfully traverse the rejection.

Without conceding the propriety of the rejections, independent claims 1 and 8 are amended to more clearly recite various novel features of the claimed invention, with particular attention to the Examiner's comments. Specifically, each of independent claims 1 and 8 is amended to clarify that the recording layer has a c-axis that is oriented perpendicularly to the in-plane direction of the recording layer.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the applied reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the applied references, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Oikawa fails to teach or suggest adjusting the oxide concentration of each magnetic layer where the recording layer has a c-axis that is oriented perpendicularly to the in-plane direction of the recording layer. Despite its asserted disclosures, Oikawa also fails to teach or suggest an embodiment where the oxide content is higher in the magnetic layer closer to the underlayer, as required by claims 1 and 8.

The Office Action asserts that Oikawa "suggests that it is *preferred* to lower the oxide concentration of the magnetic layer closest to the underlayer as compared to the other magnetic layers...a fair reading of the reference would suggest that any difference in oxide concentration of the magnetic layers is preferable to the use of the same oxide concentration across the layers." Applicants respectfully disagree.

Oikawa states the following:

[0063] As described earlier, it is more favorable to laminate magnetic layer components having different composition by changing the concentration of the oxide or nitride.

[0064] *More specifically*, when the quantity of added oxide or nitride is increased in a granular magnetic film for accelerating grain boundary segregation, fine grain size is attained, which is considered to be necessary for noise reduction. On the other hand, the increased amount of oxide or nitride causes difficulty in the epitaxial growth from the under-layer.

[0065] Consequently, the uppermost magnetic layer component of the magnetic layer is given a composition to exhibit excellent magnetic characteristics and electromagnetic conversion characteristics. The lower magnetic layer components, on the other hand, are provided for promoting orderly epitaxial growth of the uppermost magnetic layer component and lattice matching with a layer beneath the magnetic layer, which is an under-layer, for example. Namely, the uppermost component of the granular magnetic layer is formed as a granular film containing increased amount of oxide or nitride to achieve noise reduction, while the lower magnetic layer components are formed as granular films containing less amount of oxide or nitride to accelerate epitaxial growth and containing increased or decreased amount of platinum and chromium. Since increase in platinum or chromium content in a CoCr alloy increases lattice constants, the amount of the elements are appropriately varied, taking into consideration the composition of the uppermost component of the granular magnetic layer and the misfits in the layers formed under the magnetic layer, for example, the under-layer. (Emphasis added).

The use of the phrase "more specifically" at the beginning of paragraph [0064] qualifies or further defines what Oikawa intended to disclose in regards to changing oxide concentration in the different magnetic layers. In the following paragraph, Oikawa uses terms such as "is" and "are," and does not use the term "may." Oikawa explicitly discloses that the uppermost layer is to exhibit excellent magnetic characteristics and electromagnetic conversion characteristics, and that the lower layer components are provided for promoting orderly epitaxial growth. Oikawa specifically teaches that this is done by having the lowest oxide concentrations in the lowermost layer and the highest oxide concentrations in the uppermost layers. Oikawa make no suggestion that this order of oxide concentrations may be reversed.

The Applicants, in the disclosure, discuss in detail the shortcomings of the teachings of Oikawa when applied to perpendicular magnetic recording systems. *See* paragraphs [0009], [0010], and [0018] to [0021]. In this regard, Applicants point out that Japanese Patent Application Laid-Open No. 2002-208127, cited and discussed in the specification, is the Japanese publication of Japan Application 2001- 001928 to Oikawa et al., the priority document of US 2002/0136929 to Oikawa et al. cited in this rejection.

Wood fails to cure these deficiencies. Therefore, Oikawa and Wood, either separately or combined, fail to teach or suggest all of the features of claims 1 and 8.

Claims 1 and 8 would not have been rendered obvious by Oikawa and Wood. Claims 2–7, 9, and 13 variously depend from claims 1 and 8 and, thus, also would not have been rendered obvious by Oikawa and Wood. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-13 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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